



## SRS CITIZENS ADVISORY BOARD

# NUCLEAR MATERIALS COMMITTEE

**Committee Chair: Gerald Devitt**

**WSRC Support: Lyddie Broussard**

## Committee Scope

*This committee was established to study issues that involve nuclear materials (generally uranium and plutonium) that have an impact on present or future SRS activities, including spent nuclear fuel program activities, nuclear materials management, and nuclear materials integration.*

## Priority Issues for 2003

**Canyon Utilization:** F-Canyon PUREX activities were concluded in 2003 and a safe suspension process was implemented. The National Defense Authorization Act requires DOE and the DNFSB to provide joint certification for decommissioning of F-Canyon and there is an ongoing dialogue between the agencies on the timing of the certification. A Deactivation Plan is currently under review by DOE. If approved, activities conducted under the plan will lead to the eventual shutdown of F-Canyon.

Discussions are now underway to determine how long H-Canyon will remain in service to support EM activities. The eventual shutdown date for H-Canyon is dependent, in part, on a determination of the need for H-Canyon to stabilize and/or disposition additional materials. H-Canyon is able to dissolve and process significant quantities of enriched uranium including material that is up to 93% U-235. It also can handle plutonium (Pu) and uranium oxides, metals/pellets, and neptunium targets.

### DOE Contacts

Sachiko McAlhany

803-952-4802

sachiko-w.mcalhany@srs.gov

### WSRC Contacts

Phil Breidenbach

803-952-3239

philip.breidenbach@srs.gov

Kevin Hall

803-952-2486

Kevin02 Hall/@srs.gov

John Dickenson

803-952-4604

john.dickenson@srs.gov

**Disposition of Plutonium Not Suitable for MOX:** Changes to the Mixed-Oxide Fuel (MOX) Program during FY'02 led to the cancellation of the proposed Immobilization facility. The decision has left DOE/NNSA and DOE/EM with a joint responsibility to determine a new disposition path for non-weapons grade plutonium. DOE/EM will disposition the 2 tons of weapons grade plutonium that are not acceptable for MOX, as well as the approximate 3.6 metric tons of non-weapons grade plutonium. The specific disposition path for this material is currently under review and a proposed strategy is expected during the coming year.

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Sachiko McAlhany

803-952-4802

sachiko-w.mcalhany@srs.gov

### WSRC Contacts

John Dickenson

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803-952-2486  
Kevin02 Hall/@srs.gov

**EM Vision on Material Consolidation Including KAMs:** Assistant Secretary Jessie Roberson has created a series of teams to evaluate specific areas of concern as part of the Top-to-Bottom Review. One of these teams is working to find ways to expedite the disposition of all EM nuclear materials including Pu. Conclusions reached by this team may change some previously identified disposition pathways for nuclear materials throughout the DOE Complex. Cost effectiveness and security aspects of consolidation are some of the issues that are being evaluated and while no decision has been made, SRS may play a role in future consolidation efforts.

<u>DOE Contacts</u>	<u>Contact</u>
Sachiko McAlhany	John Dickenson
803-952-4802	803-952-4604
sachiko-w.mcalhany@srs.gov	john.dickenson@srs.gov

Kevin Hall	Howard Walls
803-952-2486	803 557-3661
Kevin02 Hall/@srs.gov	howard.walls@srs.gov

**Spent Fuel Disposition:** The project to support the Melt and Dilute Technology for Spent Nuclear Fuel (SNF) Stabilization was suspended during FY'02. The EM team evaluating nuclear materials will determine a suitable disposition strategy for SNF.

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Sachiko McAlhany	Howard Walls
803-952-4802	803-557-3661
sachiko-w.mcalhany@srs.gov	howard.walls@srs.gov

Kevin Hall	John Dickenson
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Kevin02 Hall/@srs.gov	john.dickenson@srs.gov

**HEU Blend Down Project:** Uranium solutions have been accumulated over the last several years as a result of the processing of spent fuel rods from SRS reactors and some offsite reactors. These solutions are a viable source material for commercial fuel fabrication when mixed with natural uranium. H-Canyon is facing a challenge to manage tank space until shipments to Tennessee Valley Authority (TVA) are initiated of the highly enriched uranium that will be used as fuel in a commercial power reactor. H-Canyon is expected to receive authorization to proceed with processing and begin a 55-month shipping campaign of 295 shipments beginning in late March 2003.

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**Progress of FB-Line Plutonium Packaging and Stabilization Project:** Modifications of FB Line to meet DOE long-term storage capabilities for Pu are underway. Startup of the outer can packaging phase is projected for April 2003 with the oxide stabilization process ready to startup in October 2003. Packaging activities should be completed by December 2005.

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**HB-Line Neptunium Stabilization Project:** Preparations are underway to begin HB-Line facility modifications to process Neptunium during 2003. The stabilization of the Neptunium solutions will result in material that will be used as a fuel source for future space exploration by NASA.

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**Receiving Basin for Offsite Fuels (RBOF) Deinventor** The Receiving Basin for Offsite Fuels (RBOF) is undergoing deinventor efforts as part of accelerated cleanup. Currently the plan is to transfer all RBOF fuel to L Basin and to stop operation of the facility. Such a consolidation would free up funds used to operate and maintain RBOF.

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**Suggested Reading**

SRS Fact Sheets

- Chemical Processing of Legacy Material at SRS
- F-Canyon
- FB-Line
- H-Canyon
- HB-Line
- K Area Material Storage Project
- Spent Nuclear Fuel at SRS

Defense Nuclear Facilities Safety Board (DNFSB) Weekly Reports  
Environmental Management Performance Management Plan